

Authenticity of Scientific Anecdotes

In the "Mémoires" of the Baron de Grimm¹, describing the ascent on June 27, 1783, from the Champ de Mars at Paris of the first balloon (*globe aérostatique*) in the presence of an enthusiastic crowd of spectators, he says: "Beaucoup de gens qui se piquent de rester froids au milieu de l'enthousiasme public, n'ont pas manqué de répéter: Mais quelle utilité retirera-t-on de ces expériences? A quoi bon cette découverte dont on fait tant de bruit? Le vénérable Franklin" (who was presumably in Paris at the time) "répond avec sa simplicité accoutumée: Eh! à quoi bon l'enfant qui vient de naître?"

On my directing the attention of Sir Henry Tizard to this passage, he told me that the *mot* here attributed to Franklin is generally quoted as Faraday's. It is so, for example, in Sir Richard Gregory's "Discovery" (1916), p. 3, where we are told (the authority is not given) that, after an experiment performed by Faraday at one of his Royal Institution lectures, a lady asked: "But, Professor Faraday, even if the effect you explained was obtained, what is the use of it?" The memorable reply was: "Madam, will you tell me the use of a newborn child?" If the story be true, Faraday was no doubt, whether or not aware at the moment of its source, remembering the saying of Franklin reported by Grimm. I see that in a note to the latest edition (1937) of Bartlett's "Familiar Quotations", the credit is given to Franklin, on the authority of James Parton in his "Life and Times of Benjamin Franklin", whose statement, it is added, was taken from Grimm's "Mémoires".

It is amusing to find that Grimm, though recording Franklin's sagacious observation, himself pokes fun at the extravagant anticipations of 'coffee-house politicians' who calculated "avec un douleur vraiment patriotique l'accroissement de dépenser que causerait sans doute l'établissement indispensable d'une marine aérienne", and the fears of 'M. Gudin de la Brenellerie' that "l'Angleterre notre rivale ne s'en empare, ne la perfectionne avant nous, et n'usurpe bientôt l'empire des airs, comme elle usurpa trop longtemps celui de Neptune". Without the excuse of a real invention like Montgolfier's, the poet Gray, nearly half a century earlier, in a Latin prize poem written when an undergraduate of Pembroke College, Cambridge, had indulged on behalf of his country a similar dream.

Anglia, quæ pelagi jamdudum torquet habenas,
Exercet quæ frequens ventos, atque imperat undæ;
Aëris attollet fascès, veteresque triumphos
Hinc etiam feret, et victis dominabitur auris.

—(*Luna Habitabilis*, 1737.)

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¹ Ed. Lond., 3, 66 (1814).

THERE are two famous anecdotes told concerning Michael Faraday and the usefulness of scientific discoveries. They appear in various forms in the works

of the nineteenth- and twentieth-century writers on scientific subjects. Both are told usually in relation to Faraday's discoveries in the field of electromagnetism. The usual form of the stories is that some dignitary or public official, usually the Prime Minister himself, visited Faraday at the Royal Institution and, on being given a demonstration of the phenomenon of induced currents, inquired: "What good is it?" One of the stories has it that Faraday replied: "What good is a new-born baby?" The other has it that he replied: "Soon you will be able to tax it!"

The first answer is also attributed to one of Faraday's predecessors in electrical discovery, Benjamin Franklin. This answer expresses in such felicitous terms the feelings of all men of science who have made discoveries that it has seemed worth while to bring to light the true circumstances in which it was used both by Franklin and by Faraday.

In 1783 Benjamin Franklin was in Paris as minister plenipotentiary for the American Colonies, and witnessed the various balloon ascents that were made for the first time in that year. More than an interested spectator, Franklin wrote several accounts of these ascents, which he sent to his good friend, Sir Joseph Banks, president of the Royal Society¹. In a letter of August 30, he wrote to Banks: "The Multitude separated, all well satisfied & much delighted with the Success of the Experiment, and amusing one another with Discourses of the various Uses it may possibly be apply'd to, among which were many very extravagant. But possibly it may pave the Way to some Discoveries in Natural Philosophy of which at present we have no conception."² But some of those present queried what use it might have, and to these Franklin replied with the famous statement: "What good is a new-born baby?" Mr. Carl Van Doren, in his splendid biography of Franklin³, points out that the image rose naturally to his mind, since there was a baby in his own house at Passy at the time, little two-weeks old Ann Jay, daughter of John Jay.

Baron Grimm hastened to send this gem of Franklinian wit to his various correspondents in Germany, Poland and Russia, "Eh! à quoi bon l'enfant qui vient de naître?" In the Franklin papers in the library of the University of Pennsylvania there is a letter addressed to Franklin in which the author is "incensed at Dr. Franklin daring to call his balloon an infant just coming to birth!"

Michael Faraday used Franklin's apothegm in 1816 in a lecture before the City Philosophical Society, where his subject was: "On Oxygen, Chlorine, Iodine and Fluorine". This lecture reads in part: "Before leaving this substance, chlorine, I will point out its history, as an answer to those who are in the habit of saying to every new fact, 'What is its use?' Dr. Franklin says to such, 'What is the use of an infant?' The answer of the experimentalist would be, 'Endeavour to make it useful'. When Scheele discovered this substance it appeared to have no use, it was in its infantine and useless state; but having grown up to maturity, witness its powers, and see what endeavours to make it useful have done."

Faraday was interested in chlorine since his master, Sir Humphry Davy, had shown in 1810 that the oxymuriatic acid which had been obtained by Scheele was an element and not a compound; Davy named it chlorine⁴. In the same year, working under Davy's supervision, Faraday succeeded in liquefying chlorine. The use to which Faraday referred was evidently in

the manufacture of bleaching powder by the method introduced by Charles Tennant of Glasgow in 1798, which had developed into a large and prosperous industry.

The second anecdote, that of saying to the Prime Minister: "Soon you will be able to tax it", presents a different story. I have been unable to find it authenticated in any major biography of Faraday. It seems an unlikely story. The only application of his research that he witnessed in his own life-time was in the "magneto-electric light" for lighthouse purposes. The vast practical industry that has been reared upon his fundamental discoveries was still to be born. He declared in 1831, "I have rather been desirous of discovering new facts and new relations dependent on magneto-electric induction, than of exalting the force of those already obtained; being assured that the latter would find their full development hereafter."⁹

One cannot prove, of course, that Faraday did not make this statement. But, until we have evidence that he did so, as we have in the case of the statement about the infant, this anecdote must be labelled 'doubtful'. Historical research discloses the truth of anecdotes which were considered to be in the 'doubtful' category for many centuries. The most famous of these is the story of Isaac Newton and the apple, classified for a long time as being even absurd. Yet this story, as Jean Pelseneer pointed out¹⁰, to-day finds corroboration. It is given in full in a biography of Newton written by his friend and admirer, the renowned antiquary, the Rev. William Stukeley (1687-1765). This biography remained unpublished from 1752, when it was completed, until 1936, when it was first published. Newton, Stukeley wrote, and he were drinking tea under the shade of some apple trees, and Newton told him that "he was just in the same situation, as when formerly, the notion of gravitation came into his mind. It was occasion'd by the fall of an apple, as he sat in a contemplative mood. . . . This was the birth of those amazing discoveries, whereby he built philosophy on a solid foundation, to the astonishment of all Europe."¹¹

If a story believed for so many years to be an absurd fiction can at last be authenticated as this one has been, then surely it is possible that the story of Faraday and the Prime Minister may some day be shown to be a true one. But, until that time, we had better doubt it and not repeat it as a true happening in Faraday's career.

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No personal references are necessary; every year one or both of these anecdotes appears in books and articles.

⁹ See Cohen, I. B., "Benjamin Franklin and Aeronautics", *J. Franklin Inst.*, 232, 101 (1941).

¹⁰ Smyth, A. H. (ed.), "The Writings of Benjamin Franklin", 10 vols., 9, 79 (New York: The Macmillan Co., 1907-10).

¹¹ Van Doren, Carl, "Benjamin Franklin", Chap. 24 (New York: The Viking Press, 1939).

¹² *ibid.*, p. 700.

¹³ "Calendar of the Papers of Benjamin Franklin in the Library of the University of Pennsylvania", 468 (Philadelphia, 1908).

¹⁴ Quoted in Bence Jones, "Life and Letters of Faraday", 1, 218 (London, 1879). See also Tyndall, John, "Faraday as a Discoverer", 43 (London, 1870).

¹⁵ See Findlay, Alexander, "A Hundred Years of Chemistry", 19, 300 (New York: The Macmillan Company, 1937).

¹⁶ Quoted in Tyndall, *op. cit.*, p. 43.

¹⁷ Pelseneer, Jean, "La pomme de Newton", *Ciel et Terre*, 1-4 (1937).

¹⁸ White, A. Hastings (ed.), "Memoirs of Sir Isaac Newton's Life by William Stukeley, M.D., F.R.S., 1752", 19 (London: Taylor and Francis, 1936).

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Dr. Clement Webb and Prof. Bernard Cohen discuss in *Nature* of February 16, p. 196, the origins of two anecdotes associated with Faraday's demonstration of magneto-electricity mentioned in my book "Discovery", published in 1916. In correspondence with Sir Henry Tizard a short time ago, I suggested that Faraday was aware of Franklin's apt reply, "What is the use of a new-born child?" when asked the use of an invention, and he quoted it in connexion with his own discovery when asked a similar question. In my book the inquiry was said to have been made at the end of a lecture at the Royal Institution whereas, as Prof. Cohen shows, the occasion was a lecture at the City Philosophical Society and the subject was not magneto-electricity but the discovery of chlorine by Scheele.

Prof. Cohen asks for information upon the second anecdote relating to Faraday's reply to a statesman who asked what was the use of a particular discovery and was told that in all probability he would soon be able to tax it. As stated in my book, the source from which I derived this story was Lecky's "Democracy and Liberty", in the introduction of which, p. xxxi, the following mention is made of Gladstone's attitude towards scientific studies:

"There were, it is true, wide tracts of knowledge with which he had no sympathy. The whole great field of modern scientific discovery seemed out of his range. An intimate friend of Faraday once described to me how, when Faraday was endeavouring to explain to Gladstone and several others an important new discovery in science Gladstone's only commentary was 'but, after all, what use is it?' 'Why, sir,' replied Faraday, 'there is every probability that you will soon be able to tax it.'"

Lecky was a distinguished historian, but as he relates only what was told to him I am afraid the evidence as to the truth of the story must remain inconclusive.

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See Reik - 3' En re Pasteur reference
to Franklin in his Little book